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12a. DISTRIBUTION/AVAILABILITY STATEMENT

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13. ABSTRACT *(Maximum 200 words)*

Development of numerical wave prediction models for purposes of wave forecasting and hindcasting has been a key part of wave research for decades. Models generally address particular wave processes such as wave generation and propagation, wave refraction/diffraction, or wave breaking. Each of these processes involves different physics, spatial scales, and numerical approaches. New types of amphibious systems and strategies require an integrated suite of models that provide predictive capability over a large region from deep water to the beach and along the coast. The Integrated Ocean Project is identifying, linking, and operating a coupled suite of wave and surf models to provide automated calculations of wave conditions from deep water to and along the beach. Unlike traditional wave forecasting and hindcasting, this effort's goal is to develop a methodology so that wave conditions can be calculated realistically over large regions for simulations of military systems and amphibious operations. This report documents the procedures used to create physically consistent integrated environmental representations of the surf zone using state-of-the-art, physics-based "off-the-shelf" wave, circulation, and surf models. To demonstrate the modeling procedures, a series of hindcasts were performed for Onslow Bay, NC, during the period of 12–22 Mar 1997. In addition, efforts to support the Synthetic Theater of War 97 are discussed. Model hindcasts discussed in this report are available online through the Master Environmental Library (http://mel.dmso.mil).

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surf zone, oceanographic data, environmental data access, refraction, beach profile, bathymetry

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